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Social Bonds and Change During Incarceration: Testing a Missing Link in the Reentry Research

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Abstract

Research examining prisoner reentry has demonstrated negative impacts of incarceration on social bonds. However, this research is limited in two ways. First, it generally examines outcomes after release, paying less attention to processes occurring in prison. Second, this work tends to examine "incarceration" as a whole, regarding prisons as homogenous. This study uses data from an experiment in which offenders were randomly assigned to incarceration at one of two prisons polarized across a number of structural characteristics that research suggests affect social bonds (a traditional prison vs. a correctional boot camp). Groups were compared with respect to commitment, belief, attachment, and in terms of changes among their relationships during incarceration. The data showed that the boot camp improved prosocial beliefs, but few differences emerged in terms of commitment and attachment. Similarly, the data showed few differences in attachment regardless of the prosocial or antisocial orientation of the inmate's friends or family.

Keywords

social bonds, incarceration, boot camp, life-course criminology

Introduction

Interest in prisoner reentry has grown among academics, politicians, and the general public in recent years, as both the size of populations returning to the community and

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the potential importance of each returning prisoner has increased. Sabol, West, and Cooper (2009) note that in the United States, at any given time, approximately 2 million citizens are incarcerated and nearly 700,000 inmates return to communities each year. Among minority communities in urban areas, incarceration is now more common than high school graduation (Petitt & Western, 2004; Western, 2001). Incarceration is becoming a normative and ubiquitous institution in the lives of large segments of the United States (Mauer & King, 2007; Secret & Johnson, 1997).

The frequency of incarceration and indications of disparity in its application have served to motivate a broad and vigorous body of research on the potential impacts of imprisonment, with particular attention paid to reentry. This interest has generated important work addressing several issues, including the potential harm of incarceration to communities and social organization (Clear, Rose, & Ryder, 2001; Petersilia, 2003), labor markets (Bushway, Stool, & Weiman, 2007), children of incarcerated parents (Petersilia, 2003), marriage prospects (Lopoo & Western, 2005), and a slew of negative impacts on other institutions (see Travis & Visher, 2005; Uggen, 2007). One long-standing debate revolves around the impacts of imprisonment on social bonds (Hirschi, 1969; Laub & Sampson, 2003). Recent work has suggested that prisons have a deleterious effect on released offenders' social bonds, either through breaking off previous relationships or by introducing stigma that creates a barrier to the formation of new bonds (Lopoo & Western, 2005; Sampson & Laub, 1997; Western, 2001). However, a major gap in this literature is that few studies have examined exactly how prisons affect bonds *during* incarceration and whether different forms of incarceration have similar effects. To that end, this article presents an empirical examination of the effect of two different forms of incarceration on social bonds.

Social Bonds, Prison, and Desistance

Within the desistance literature, scholars have considered social bonds a prominent part of the reformation process. Indeed, some have suggested that social bonds are essential toward a successful transition away from a life of crime (see Doherty, 2006; Horney, Osgood, & Marshall, 1995; Laub & Sampson, 2003; Sampson & Laub, 1993). These arguments are particularly salient within the corrections literature, with recent tests supporting the importance of social bonds for those in some phase of the correctional system. For example, those who are more committed to conventionality and more attached to conventional others tend to have lower rates of recidivism and probationary failure (MacKenzie & De Li, 2002), a relationship found with some consistency in the literature (Hepburn & Griffin, 2004; Horney et al., 1995; Kruttschnitt, Uggen, & Shelton, 2000; Laub & Sampson, 1993; Sampson & Laub, 1993; Travis & Visher, 2005). Fostering social bonds then represents a vibrant path to desistance by giving people something to lose (stakes in conformity) as well as by invoking and facilitating cognitive change (Giordano, Cernovich, & Rudolph, 2002; MacKenzie, 2006). Conversely, these findings suggest that prisons will inhibit desistance if they break or damage social bonds (Petersilia, 2006; Travis & Visher, 2005; Uggen, Manza, & Thompson, 2006).

Recent work assessing the impact of prison on social bonds tends to focus on processes after release. The most common tests have studied the relationship between having been incarcerated and later social bonds such as those related to work and marriage (Laub & Allen, 2000; Laub & Sampson, 2003; Lopoo & Western, 2005; Sampson & Laub, 1993; Western, Kling, & Weiman, 2001). This work suggests that incarceration "knifes off" personal relationships (Caspi & Moffitt, 1993; Sampson & Laub, 1993) and reduces social capital (see Coleman, 1988). The focus of this literature, however, has been on postrelease structure and labeling processes to explain how and when these relationships tend to fail or change. For example, Sampson and Laub (1993) suggest that incarceration may lead to a "structural labeling" effect (p. 253), in which adult social bonds become difficult to form. These researchers note that "arrest, conviction, and imprisonment are clearly stigmatizing, and those so tarnished face structural impediments to establishing strong social ties to conventional lines of adult activity" (Sampson & Laub, 1997, p. 16). Indeed, the literature is increasingly clear in its support of these notions, showing that offenders often experience difficulty maintaining social relationships that existed prior to incarceration and face barriers to important institutions such as marriage, employment, housing, welfare access, and parenting rights on reentry (see Graffam, Shinkfield, & Hardcastle, 2008; Hagan & Dinovitzer, 1999; Huebner, 2005, 2007; Laub & Allen, 2000; Laub & Sampson, 2003; Lopoo & Western, 2004, 2005; Olivares, Burton, & Cullen, 1996; Shinkfield & Graffam, 2009; Western, 2002; Western et al., 2001). This research then tends to suggest that incarceration in general has negative effects on later life outcomes. Yet this work generally does not recognize or explore possible variations within different forms of incarceration.

Some research has focused on social bonds or relationships changing within prison, although this area has been less prominent in recent work. The "deprivation" model popularized by Sykes (1958) offers a well-known example of scholarship focused on within-prison processes and change. Sykes suggested that inmates were often "deprived" of key human needs, such as the removal of freedom, materials, and relationships. According to Sykes, increased deprivation could lead to greater misconduct while detained as well as continued or increased offending on release. Two processes were emphasized in this regard. First, he suggested deprivation would foster antisocial subcultures and thus an intensification of antisocial values or beliefs among inmates (Jiang & Fisher-Giorlando, 2002). However, he also argued prisons can encourage later offending by knifing off prosocial relationships. To this end, Sykes (1958) argued, "many inmates . . . have found their links with persons in the free community weakening as the months and years pass by" (p. 65). From the deprivation perspective, prison damages bonds in a twofold manner: first by cutting off the offender from prosocial ties and second by causing personal change in values that may facilitate offending.

Some of these ideas have been echoed in more recent work discussing bonds and prison. For example, Petersilia (2003) suggests that bonds and social capital of inmates may be damaged if they are housed far from family (i.e., inhibiting visits) and by policies that limit phone calls (e.g., exceptional expenses, limited minutes allowed, failure to provide an adequate number of phones). To clarify, recent work focusing on changes during incarceration has found that social support and social ties are an important part

of prisoner adjustment. Those prisoners who maintain ties to the community during incarceration appear better adjusted, generating less misconduct (Bales & Mears, 2008; Jiang, Fisher-Giorlando, & Mo, 2005; Jiang & Winfree, 2006). To this end, correctional facilities or programs that foster social supports should have more positive outcomes for prisoners. For example, programs that include educational opportunities or promote visitation and contact with significant others would be expected to improve prisoner adjustment compared to programs without such features.

Two observations emerge from this literature. First, although there is some recent work examining change while detained, most of the recent emphasis in the field has been on processes occurring after release. This is particularly true in terms of social bonds. In addition, some literature suggests that prisons may vary in their impact, depending on the degree to which they offer structure that inhibits or helps inmates retain or form social bonds. Regardless, the field has produced little empirical work testing whether prisons are indeed homogenous or whether their impact on social bonds varies across place.

Is the Impact of Prisons Homogeneous?

The majority of work that explores the impact of prisons either implicitly or explicitly assumes a homogeneous effect across different forms of incarceration. Yet much literature suggests that prisons may vary in myriad ways related to social bonds, including freedom and control allowed to inmates (Dilulio, 1987; MacKenzie, Wilson, Armstrong, & Gover, 2001; Sykes, 1958), type and quality of programming available (Petersilia 2003), staff procedures or culture (Bottoms, 1999; Franke, Bierie, & MacKenzie, 2010), and access to visits or telephones, as well as other characteristics (Liebling, 2006; Maruna & Toch, 2005). More specifically, prisons may vary in characteristics that affect inmates' ability to form or maintain bonds with conventional society.

For example, correctional boot camps are an alternative form of incarceration modeled after their military namesake. These prisons differ from traditional prisons on many fronts, particularly with respect to the rigid structuring of inmates' time, conduct, and daily activities. Although our argument is that there is heterogeneity with respect to forms of incarceration, a general discussion of boot camps will help contextualize the present study.

Early boot camps emphasized militaristic aspects including structure and discipline. Perhaps not surprisingly, early evaluations indicated that boot camps had no effect on recidivism (Cullen, Blevins, Trager, & Gendreau, 2005; MacKenzie, 1991). However, more recent boot camp programs have begun to focus on rehabilitation, treatment, and prosocial skills training (Armstrong, 2004). These characteristics, which differentiate boot camps from traditional prisons, are exactly those that theoretically affect the social bonds of inmates. Duwe and Kerschner (2008) argue that in Minnesota, recent boot camp programs have had an increasing focus on rehabilitation. Here, offenders are provided with substance abuse treatment as well as cognitive educational and transitional training. Perhaps as a result, their study demonstrated a positive impact of the

boot camp on later life outcomes. Although such a focus on rehabilitation may not be a hallmark of most or all boot camps in the United States, certain programs have trended away from a military-like atmosphere and toward treatment. By lumping prison together as a whole in analyses and theoretical discussions, researchers potentially miss important variation.

Finally, institutions may vary in facilitating bonds during incarceration. For example, some prisons offer job placement or training programs that help to facilitate connections with economic institutions. In this sense, prisons may vary in their impact on new social bonds being formed as well as whether old bonds are healed or hindered. There are several ways prisons may have a positive impact on social bonds. First, there is the possibility that prisons may represent a "stabilizing" influence on offenders whose lives were out of control or otherwise chaotic before incarceration. That is, most prisons offer more safety and structure than otherwise existed for offenders prior to incarceration. A sizable literature exists suggesting many felons are involved in a large number of risky behaviors just prior to incarceration, including drug use and binges, crime sprees, and a variety of other living conditions endemic to a life spiraling out of control (MacKenzie, Browning, Skroban, & Smith, 1999; Shover, 1996). These situations may generate enormous personal problems for an individual and also be particularly damaging to what social relationships and bonds an individual has or had. In contrast, prisons (may) offer free access to health care, mental health services, provision of three meals per day, sanitary living, and far less access to drugs or alcohol than on the streets. This may encourage change in dispositions related to social bond formation (i.e., interest and ability to alter social bonds). Also, prisons often require inmates to either work, attend school, or attend vocational training. This may increase the personal capital offenders have through which to foster bonds to prosocial institutions during and after confinement (i.e., attain employment, as well as build a sense of attachment and commitment to these institutions while confined). Prisons vary in these "program" characteristics (e.g., the provision of quality health care, structure, safety, mental health treatment and detoxifications, and useful programming) and, therefore, prisons will likely differ in their impact on the social bonds of inmates.

Prisons may also offer opportunities for the formation of new bonds to institutions or people within the prison. Although at times these bonds may be to antisocial people (e.g., Shaw, 1966; Shover, 1996) or institutions (e.g., gangs, see Cummins, 1995), other bonds may be to prosocial institutions (e.g., education, a vocational trade, religion) or people (e.g., chaplains, teachers, reformed inmates). Laub and Sampson (2003) present narrative accounts in which elderly participants who were serious delinquents when teenagers were asked to identify significant events in their lives—events that changed their life trajectory. Some desisters spoke of incarceration as a turning point, suggesting that had it not been for a stint at the juvenile facility, their lives may have been much worse. Those who saw this experience as positive often spoke of kind, supportive staff who helped encourage personal and attitudinal change. In contrast, it is also plausible that in institutions in which staff do not allow these relationships or behave in procedurally unjust or illegitimate ways, the inmates not only will fail to

form bonds with them or their institutions but may experience an increase in animosity toward them (e.g., Bottoms, 1999; Franke et al., 2010; Laub & Sampson, 2003; Sherman, 1993; Tyler, 2000) or disintegrate prosocial bonds that existed previously.

Finally, some posit incarceration may promote a reconnecting of *past* bonds. Edin, Nelson, and Paranal (2001) point out this possibility: "We must give equal consideration to the possibility that for some, especially those with particularly high offending rates, incarceration may play a restorative role, allowing bonds that were largely latent to begin to form or re-form" (p. 5). These researchers note that for some offenders, it is possible that incarceration may change behaviors of inmates that had, in the past, driven a wedge between an offender and family or friends on the outside. Not only may behaviors change but incarceration may also provide a controlled platform through which relationships with families and communities can be reintroduced. Some families may even require the safety of prison walls before they are willing to test the waters again in terms of rebuilding relationships with offenders.

The Present Study

Recent scholarship on social bonds and prison has provided important insights into the impacts of prison within and after release. However, several limitations persist in this literature. First, although historical work (e.g., Sykes, 1958) examined change during incarceration, the new wave of empirical work has tended to focus more exclusively on the postincarceration period. Second, scholars studying the impact of incarceration have tended to focus on overall impacts of incarceration, while providing less focus on identifying whether and how prisons may vary in their impact on bonds.

This study attempts to address these shortcomings by testing the effect of different forms of imprisonment on social bonds and places special emphasis on testing whether the structure of prisons can cause a change in bonds *during* incarceration. To accomplish these goals, we exploit a randomized design in which inmates were sentenced to serve identical terms (6 months, then release) in either a traditional prison or a correctional boot camp. Prisoners were asked to report on changes that occurred while they were serving their prison term. Both facilities offer educational, life skills, and substance abuse counseling for the inmates.[1] Thus, the two facilities chosen represent relatively similar therapeutic programs but are polarized with respect to structure; the regimes differ in multiple ways the literature suggests would affect bonds, including deprivation (freedom, safety, control over personal activities), access to telephones and visits, quality of programming, staff behavior and philosophy, and other avenues to positive change described above (see Bierie, 2009; Franke et al., 2010). This polarization makes the experiment a reasonable, and novel, platform for testing whether variation in prison regimes can have any impact on bonds. Thus, the specific focus here is on testing whether variation *can* have a causal impact on social bonds from start to finish of a sentence. Note that we are not seeking to determine whether one form of incarceration is superior to another here. Drawing from observations of the

two programs (see Franke et al., 2010), which we describe in detail below, we predict that the boot camp group will have more positive outcomes than the prison group (in terms of increased attachment to prosocial others, commitment, and belief).

Method

Sample

This article uses data from a randomized experiment comparing the Maryland adult correctional boot camp to a traditional prison and examines the social bonds of inmates at the end of their 6-month term of incarceration (see Bierie, 2009; Franke et al., 2010; Mackenzie, Bierie, & Mitchell, 2007; Mitchell, MacKenzie, & Perez, 2005; O'Neill, MacKenzie, & Bierie, 2007; Rocque, 2007). The study focused on all offenders in the state of Maryland sentenced between 2001 and 2004 who participated in an early-release program. Inmates agreed to participate in educational, drug, and life skills training for 6 months. In exchange, the offender's sentence was reduced to that 6-month period (reductions ranged from 1 to 5 years taken off of sentences). If they were not successful within the program, they had to serve the remainder of their original prison term and lose any good time earned while in the program. A total of 234 offenders qualified as participants in this study.[2]

Individuals in each cohort between 2001 and 2004 were randomly assigned to serve their 6-month term in the traditional prison or the boot camp. The traditional prison was designed to house prerelease inmates and offered the same programs (education, life skills, and drug treatment) as the boot camp. However, the traditional prison and the boot camp differed substantially in terms of policy and staff behavior, structure of time, management of inmates, and the number of inmates not serving early-release sentences but also housed at the facility.

Empirical Strategy

The randomization of the participants allows a causal analysis in that any difference in self-reported bonds of inmates at the end of the sentence is attributed to the impact of the facility (i.e., boot camp vs. prison). The study compares two prisons that are substantively different from one another in terms of staffing, policy, and social structure. These styles of prison regime were chosen because they were polarized across several dimensions of structure that the literature suggests should affect bonds. This variation, then, is useful for setting a realistic test of whether differences in prison regimes can affect bonds.

Data Sources

Data were collected from two sources. First, official Department of Corrections records were searched to identify demographics (age, race) and criminal history

(number and type of prior offenses). Second, survey data were collected from inmates. The survey measured personal history items (education, family, and work history) and criminal history and included several scales designed to tap constructs that were theoretically or empirically related to recidivism. The survey tool was administered 1 week before the cohort began the early-release program (Time 1 survey) and was repeated 1 week before the 6-month term ended (Time 2 survey). Time 1 data were collected before inmates were told which facility they were assigned to (all participants had previously consented to taking part in the study). Data for this study came from the Time 2 survey administered a week before the end of the 6-month term. All inmates were included in the study regardless of whether they failed or successfully completed the program.

Missing Data

Data could be missing for three reasons. First, throughout the study (and at separate times), four respondents refused to participate in the survey. Second, participants may not have completed the Time 2 survey because they had been removed from a given program and could not be located and asked to participate. Third, some had been freed before the research team could conduct a Time 2 interview, either through a successful appeal or through a judicial "reconsideration" hearing in which the participant's sentence was shortened and the offender was released. Finally, some participants may have skipped over the items used to construct scales for this study. As described below, if minimal data were missing from items comprising scales, then summated scales were constructed using present data. However, if more than 30% of the items were missing, participants were excluded. Of the 226 participants who were available for the study, a total of 209 were used in the present analysis.

There were no differences in rates of nonresponse across facilities. Those that did drop out of the study tended to be slightly lower-risk than those who stayed in. In sum, the rate of missing data appears relatively small and uncorrelated with facility assignment. Data were analyzed as randomized.

Covariates

The key independent variable was a dummy reflecting prison assignment, coded 1 for the boot camp and 0 for the traditional prison. Age was coded as a continuous variable, ranging from 17 to 32. The strong majority of offenses were drug related, a small number were property offenders, and none were violent (as required by the program). Thus, a single dummy of drug offense was used to distinguish between the two types of offenses in these data. Age of first arrest was derived from official records and coded in a year metric. Finally, 99% of the participants were categorized as White or Black. Thus, race was coded as a single dummy of White versus non-White. As shown in Table 1, prisoners assigned to the two prisons were not statistically different from one another in basic demographics at the start of the study.

Table 1. Descriptive Statistics at Time 1 for Final Sample

	Boot camp (n = 100)	Prison (n = 109)
White, %	10	17
Age, *M* (*SE*)	23.0 (0.43)	23.5 (0.39)
Age at first arrest, *M* (*SE*)	15.7 (0.30)	16.9 (0.43)
Ever employed, %	88	84
Married, %	5	9
Drug offense, %	93	92

Note: All comparisons between groups ($p > .10$).

Dependent Variables

This study focuses on differences in three elements of social bonds: commitment, belief, and attachment.[3] Social bonds may best be understood as processes rather than events (see Sampson & Laub, 1993). Building on this observation, our measures tap development, or changes in bonded states. A variety of measures were used to tap these constructs, including summated scales of elements as well as individual items on relationships changing over the course of this incarceration spell. Importantly, these measures attempted to capture the quality of those relationships rather than their mere existence. Thus, the variables more accurately reflect social bonds or ties than measures that simply reflect whether a person is involved in a relationship (e.g., marriage). Finally, we assess multiple types of relationships (friends as well as family), and we partition our assessment of relationship change by the criminality of the people with whom our participants had relationships. In the section below, we describe these measures of belief, commitment, and attachment in more detail. See Table 2 for descriptive information on each scale.

Commitment. Commitment is defined as social investments in conventionality (see Toby, 1957). Most research examining commitment measures whether an individual has something to lose (such as a job or marriage) and assumes that this represents the presence of commitment. As some critics have noted (Laub & Sampson, 2003), the problem with these measures is they assume any individual who has a job, marriage, etc. feels a pressure toward conformity (regardless of the quality of that relationship). In contrast, it is more plausible that people vary in how intensely these circumstances translate into the intention or pressure toward conformity. Commitment then can be measured directly rather than indirectly, by asking individuals about their intentions toward conformity.

To this end, a summated scale was created using 13 items taken from the Time 2 survey, such as "Drugs are NOT a part of my future" and "I am not coming back to prison," as well as items tapping one's perceived ability to avoid antisocial behavior in the future and one's commitment to finding legal employment. Principal components analysis (PCA) confirmed that these items loaded on one factor, and the scale

Table 2. Comparison of Social Bonds Across Facilities

Item	Boot camp, *M* (*SE*)	Prison, *M* (*SE*)	Difference, *M* (*SE*)
Supportive attachment (*n*)			
My family will help me stay out of trouble (207)	3.2 (0.09)	3.3 (0.09)	−0.10 (0.13)
I have family or friends I can turn to for guidance (207)	3.5 (0.07)	3.5 (0.07)	0.00 (0.10)
I have family or friends who care about me (207)	3.6 (0.06)	3.6 (0.07)	0.02 (0.09)
I have family or friends who will spend time with me (207)	3.5 (0.06)	3.5 (0.05)	−0.06 (0.08)
I have family or friends from whom I could borrow money (207)	3.2 (0.10)	3.2 (0.09)	−0.03 (0.01)
I have family or friends I can count on in an emergency (207)	3.5 (0.07)	3.4 (0.08)	0.07 (0.11)
I have family or friends I can talk to about important decisions (207)	3.5 (0.07)	3.6 (0.07)	−0.10 (0.10)
Scale (207)	3.4 (0.06)	3.4 (0.05)	−0.02 (0.08)
Commitment (*n*)			
Drugs are not a part of my future (206)	3.30 (0.10)	3.10 (0.12)	0.15 (0.16)
I won't come back to prison (207)	3.60 (0.07)	3.70 (0.07)	−0.05 (0.10)
I know how to change things in my life (207)	3.40 (0.07)	3.50 (0.07)	−0.04 (0.10)
I have a good sense of where I'm headed in life (207)	3.40 (0.07)	3.40 (0.06)	−0.06 (0.09)
I know how to reach my goals (207)	3.60 (0.06)	3.60 (0.05)	0.01 (0.07)
I have an action plan to reach my goals (207)	3.30 (0.07)	3.40 (0.06)	−0.17 (0.09)
I have a plan to make my life more balanced (207)	3.40 (0.06)	3.40 (0.06)	0.00 (0.09)
Scale (207)	3.40 (0.05)	3.40 (0.04)	−0.02 (0.07)
Belief (*n*)			
Police will help you (204)	0.38 (0.05)	0.32 (0.05)	0.06 (0.07)
Police stick their noses into other people's business—rev (207)	0.30 (0.05)	0.25 (0.04)	0.04 (0.06)
Police treat you dirty—rev (207)	0.34 (0.05)	0.21 (0.04)	0.13* (0.06)
Police and judges will tell you one thing and do another—rev (206)	0.30 (0.46)	0.26 (0.44)	0.04 (0.06)
Cops and guards are pigs—rev (202)	0.60 (0.05)	0.52 (0.05)	0.07 (0.07)
The criminal justice system sucks—rev (203)	0.26 (0.04)	0.19 (0.04)	0.07 (0.06)
Scale (199)	0.36 (0.29)	0.29 (0.03)	0.07 (0.04)

Note: rev = reverse coded.
*$p < .05$.

had moderate to high reliability ($\alpha = .76$). A higher score indicated more conventional commitment.

Belief. Belief is defined as feelings of legitimacy in the law. The concept of belief is conceptualized two ways here. We see social control as referring to expressing

statements of *behavior* that is right and wrong as well as to expressing *values* reflecting prosocial society (e.g., attitudes toward the law; Hirschi, 1969, p. 202). This measure is conceptually and empirically related to previous formalizations of belief (see Kempf, 1993). A summated scale of six items reflecting beliefs was constructed from dichotomous items, including "Cops and guards are pigs" and "If the police don't like you, they'll try to get you for anything." PCA confirmed that these items loaded on one factor, and the scale had acceptable reliability (α =.70).[4] Items were reverse coded when needed such that a higher value represented more prosocial beliefs.

Supportive attachment. Supportive attachment is defined as having significant others on whom one can rely for assistance and support. This measure taps the perceived strength or quality of one's relationships with others (see Sampson & Laub, 1993). Drawing on the Time 2 survey, two measures of attachment were created. The first was a summated scale drawing on seven items regarding future plans and relationships. These included items such as "I have family or friends I can talk to, who care about my feelings" and "My family is going to help me stay out of trouble." Response options ranged from *strongly agree* to *strongly disagree*, such that higher scores on the scale indicated more attachment. Again, a higher score indicates more attachment. PCA confirmed that these items loaded on one factor, and the scale had high reliability (α = .84).

Facilitative attachment (relationships). Facilitative attachment is defined as the degree of change in interpersonal relationships that occurred during incarceration. This construct refers to one's relationships with others without reference to how strong those relationships were at the beginning of the incarceration period. To measure this, we relied on a second set of items that focused more explicitly on relationships as they changed over time. These items drew on a section of the Time 2 survey asking participants about change in relationships since incarceration began. Seven items asked participants whether they believed their relationships with peers, spouse or partner, parents, and other family had become better (value = 2), experienced no change (value = 1), or become worse (value = 0) during this incarceration period (range 0-2).[5] Again, a PCA confirmed that these items loaded on one factor.

Finally, this latter set of items was assessed after taking the criminality of the people being referenced into account. This stratification is tied to Hagan and McCarthy's (1997) observation that some relationships present "criminal capital," that is, attachment that may encourage criminality. We might expect a successful prison program to do two things: to break the inmate's bonds to antisocial or indifferent others and to strengthen their relationships with others who are prosocial. Recognizing that there possibly is heterogeneity in the relationships these inmates held on entrance (in terms of antisocial or prosocial), the relationships held were stratified into groups: prosocial or other (e.g., antisocial or neutral).

The specific items used to categorize these relationships included "Your friends would approve if you: (a) continued to do the same things that got you in trouble in the past, (b) hurt someone in a fight, (c) sold drugs, (d) destroyed someone's property, and (e) broke into a building to steal something." Response options for each of these five items were Likert-type, with the five response options ranging from *strongly agree* (0) to *strongly disagree* (4). In the summed scale, scores could range from 0 to 20,

with higher scores indicating more criminality. If the summed score on these five items was less than or equal to 5, then that relationship was coded as prosocial = 1; a value of 6 to 20 was coded as prosocial = 0. A second set of these seven items in the survey repeated these questions, but it substituted the reference of "family" for "friends." These were used in the same way to create a family prosocial dichotomy.

It should be noted that the categories neutral and antisocial may not be appropriately combined if a study is explicitly examining antisocial peers and relations. However, we wish to emphasize that here we are operating within a theoretical framework that sees attachments as important in leading people away from crime. Attachments are particularly likely to lead to desistance if they are made with prosocial others and perhaps less likely if attachments are made with those who are neutral or even hostile toward the law. In addition, empirical concerns also influenced this decision, as dividing the sample into three groups would result in too few cases for our analyses to be stable. Thus, the neutral and antisocial categories were combined for the analyses.[6]

Analytic Strategy

Bivariate and multivariate analyses were calculated to examine the main hypotheses for this study. For the multivariate analyses, least squares regression was used. Separate analyses of the four social bonds comparing the two facilities were completed for each item in the scale and for the overall scale. Next, covariates were added to the model, a process that increases power within randomized experiments by eliminating random noise in the computation of standard errors (see Heckman & Smith, 1995). Finally, relationships (family and peers) were examined as a function of facility assignment. In doing so, we pay close attention to the criminal disposition of those family members and friends to whom an inmate may be bonded (i.e., qualifying change in relationships by the anti- or prosocial disposition of that individual).

Results

Comparison on Bond Element Scales

As noted above, there were no systematic differences between groups at entrance to the study on the variables measured. The questions for bonds were not asked during the Time 1 survey and therefore we could not compare inmates on these scales. However, they are assumed to be statistically similar as a function of randomization. Time of exposure to prison was the same for both groups (6 months), both groups from a given cohort completed the Time 2 survey on the same day, and both groups were at similar points from their release dates on the date the survey was completed. Thus, differences in Time 2 values on each bond-element scale reflect change in dispositions over time caused by facility assignment. Table 2 shows individual items as well as the scale created from each set of items. As expected, the belief scale indicates that the boot camp generated significantly higher prosocial beliefs over time. Also as expected, there were

Table 3. OLS Regression of Social Bonds on BC With Covariate Power Increase

	Commitment (n = 197), β (*SE*)	Belief (n = 199), β (*SE*)	Attachment (n = 197), β (*SE*)
Intercept	2.80*** (–)	–0.05 (–)	3.20*** (–)
BC	–0.07 (0.07)	0.09* (0.04)	–0.86 (0.78)
Age	0.03** (0.01)	0.01* (0.01)	0.02* (0.01)
White	–0.25 (0.10)	0.08 (0.06)	–0.38** (0.11)
Age at first arrest	0.00 (0.01)	0.00 (0.00)	–0.01 (0.02)
Drug offense	0.11 (0.12)	–0.05 (0.08)	0.07 (0.14)
R^2	.08	.07	.07

Note: OLS = ordinary least squares; BC = boot camp.
*p < .05. **p < .01. ***p < .001.

no differences with respect to the items or the full scale for "supportive" attachment. Contrary to expectations, the commitment scale did not indicate any significant difference between groups, although the direction favored the traditional prison.

It is worth noting that the bivariate comparison in Table 2 has only moderate power to detect differences. To partial out any minor noise in the estimates (and increase power), the facility effect was reestimated within a multivariate framework in Table 3. With the multivariate specification, we see that the relationships remain largely unchanged. The boot camp (BC) coefficient is slightly stronger here, again indicating a significant increase in prosocial beliefs among the boot camp participants. In contrast, the attachment and commitment items remain nonsignificant (although the direction favors the traditional prison).

Social Relationship Change

The above analysis compares dispositions of offenders, primarily reflecting intentions and decisions made regarding their future. However, they ignore a critical aspect of social bonds: relationships. In this section, we compare inmates in terms of the relationships they hold at release. We identify whether they believe relationships have improved during incarceration, not changed, or become worse. We also pay special attention here to the criminality of those people who comprise the social world of inmates.

Any given inmate may have all, a few, one, or none of these social relations open to them. However, the majority did report at least one social relationship existing at Time 1. Table 4 displays changes in six types of family relationships as well as for friends and a summated measure of change. Here, values lower than 1.0 indicate that a relationship became worse, and values greater than 1.0 indicate that it became better. Recall that the items used in this analysis asked offenders to describe how incarceration had affected their social relationships (mother, father, sister, friend, etc.). This measure has the benefit of creating a general statement about the inmates' perception

Table 4. Improvement in Facilitative Attachment

	Boot camp		Prison		Difference
	n	*M* (*SE*)	*n*	*M* (*SE*)	*M* (*SE*)
Wife	50	1.22 (0.11)	51	1.14 (0.10)	0.08 (0.15)
Girlfriend	78	1.17 (0.10)	81	1.22 (0.08)	–0.05 (0.13)
Child	68	1.16 (0.09)	71	1.11 (0.06)	0.05 (0.12)
Parents	97	1.46 (0.06)	100	1.30 (0.06)	0.16† (0.09)
Brother or sister	97	1.24 (0.07)	102	1.26 (0.06)	–0.02 (0.09)
Other family	95	1.24 (0.06)	105	1.11 (0.06)	0.13 (0.08)
Close friends	92	1.09 (0.07)	97	0.91 (0.07)	0.18† (0.10)
Any (average)	100	1.23 (0.05)	108	1.17 (0.04)	0.06 (0.07)

†$p < .10$. *$p < .05$. **$p < .01$.

of how incarceration is affecting relationships, regardless of the type of relationship. Table 4 shows few differences in change between boot camp and traditional prison inmates, although boot camp inmates experienced marginally better change with respect to peers ($p < .10$).[7]

As noted above, we are particularly concerned with the nature of the people inmates may be bonded to. Hirschi (1969) thought that the relative criminality of people comprising a social network was irrelevant—being attached to a criminal is just as prosocial as being attached to a saint. Neither Hirschi's data nor the literature's replications have supported this assertion. In fact, the opposite has been found—attachment to antisocial others may be criminogenic (Hindelang, 1973; see Akers, 2000, for a full review). For this reason, we delve deeper into these data and the inmates' reports on the criminality of peers and family to measure change. This analysis assumes that improving relationships with prosocial family and peers is a positive outcome, and decreasing attachment to indifferent or antisocial peers or family is also a positive outcome.

In Table 5, five items capture inmate impressions of the orientation of their friends and family. Inmates were asked how much their friends or family would "approve" of certain antisocial activities. These data were used to tap the criminal or prosocial orientation of inmates' significant others. Here, values of 0 and 1 indicate an antisocial disposition. Values of 2 through 4 indicate indifference or disapproval of criminal behavior. The data showed that boot camp inmates had significantly more antisocial relationships on 2 of the 10 items ($p < .05$).

Table 6 displays change after splitting the inmates based on the criminality of the relationships referenced. For example, inmates who reported their peers would support their selling drugs, stealing, hurting someone in a fight, etc. were considered "bad peers." In Panel B of Table 6, a lower value for the boot camp variable would indicate that the boot camp weakened bonds to "bad or neutral peers" (a desired effect). In contrast, Panel A refers to peers who would not support the criminality of the participant. In this case, a higher value for the boot camp variable would indicate a desired effect.

Table 5. Prosocial Versus Neutral or Antisocial Relationships

	Range	Boot camp, *M* (*SE*)	Prison, *M* (*SE*)	Difference, *M* (*SE*)
Would your friends approve if . . .				
You continued same behavior that got you into trouble	0-4	1.64 (0.13)	1.38 (0.11)	0.26 (0.17)
You purposely damaged something not belonging to you	0-4	1.59 (0.12)	1.17 (0.10)	0.42 (0.15)*
You broke into a building or car to steal	0-4	1.55 (0.12)	1.18 (0.10)	0.37 (0.16)*
You hurt someone in a fight	0-4	2.15 (0.12)	1.70 (0.11)	0.45 (0.17)
You sold drugs	0-4	1.93 (0.13)	1.74 (0.13)	0.19 (0.18)
Antisocial Peers (sum >5)	0-1	0.82 (0.04)	0.73 (0.04)	0.09 (0.06)
Would your family approve if . . .				
You continued same behavior that got you into trouble	0-4	0.87 (0.11)	0.69 (0.10)	0.18 (0.15)
You purposely damaged something not belonging to you	0-4	1.02 (0.11)	0.88 (0.09)	0.14 (0.14)
You broke into a building or car to steal	0-4	0.83 (0.10)	0.68 (0.09)	0.14 (0.14)
You hurt someone in a fight	0-4	1.28 (0.11)	1.22 (0.11)	0.06 (0.16)
You sold drugs	0-4	1.02 (0.12)	1.04 (0.12)	–0.02 (0.17)
Antisocial Family (sum >5)	0-1	0.51 (0.05)	0.53 (0.05)	0.02 (0.07)

Note: Higher mean score indicates greater approval.
*$p < .05$.

Table 6. Strengthened Bonds: Change in Attachment to Prosocial Versus Antisocial Others

	Boot camp		Prison		Difference
	n	*M* (*SE*)	*n*	*M* (*SE*)	*M* (*SE*)
Panel A: Relationship change (prosocial)					
Family	48	1.34 (0.08)	49	1.20 (0.06)	0.15 (0.10)
Peers	17	1.12 (0.19)	26	0.88 (0.14)	0.23 (0.23)
Panel B: Relationship change (antisocial)					
Family	50	1.16 (0.08)	55	1.23 (0.07)	–0.07 (0.10)
Peers	73	1.07 (0.08)	68	0.93 (0.08)	0.14 (0.11)

Note: Higher mean score implies improved rating of relationship.
*$p < .05$. **$p < .01$.

In Table 6, the data show that even after reestimating the analyses to take the criminality of the offenders' social milieu into account, there are no systematic differences between the boot camp and prison group. Although the boot camp participants reported improved relationships on three of the four comparisons, none of these were statistically significant. The social relationships of offenders with prosocial and antisocial

peers and family appear to have changed similarly between the two groups. However, the small *n*s in each cell make it likely that the power to detect differences was low.

Discussion

Because of the increasing numbers of incarcerated individuals returning to society each year, the impact of incarceration on criminality has become a critical issue. Numerous studies in recent years have found a negative effect of incarceration on social bonds (see Hagan & Dinovitzer, 1999; Huebner, 2005, 2007; Lopoo & Western, 2004, 2005; Olivares et al., 1996; Western et al., 2001). However, as this article has noted, the literature has two key limitations. First, studies have tended to overlook change during incarceration, instead focusing on change after return to the community. Second, most previous work regarding the impact of incarceration on social bonds has assumed that all forms of incarceration are homogenous, failing to consider differences in environments and programs. However, a large body of correctional literature suggests myriad differences in correctional facilities, thus indicating that past work in this area may be misleading.

Using a randomized research design in which offenders were assigned to either a traditional prison or a correctional boot camp, we sought to address the shortcomings identified above. Our study first examined change in belief, commitment, and attachment during incarceration across the two types of facilities. The data indicated that facility type does not have a discernible impact on commitment or attachment. Both our descriptive results comparing Time 2 measures of commitment (to conventionality) and attachment (feelings of closeness to others) and the power-enhanced regression analyses showed a similar pattern of nonsignificance. Of note, the boot camp showed a trend toward increased feelings of attachment toward parents and peers ($p < .10$). This suggests that there may be something about the environment of the boot camp (e.g., access to education, offender–guard interactions, vocational training) that leads to, or has the potential to cause, prosocial cognitive changes.

With respect to measures of belief—values toward the law and law enforcement agents—our results tell a different story. The Time 2 comparison of both individual belief items and the belief scale suggest that the boot camp increased prosocial beliefs more so than the prison. The OLS regression results with added covariates confirmed this finding. This suggests that the impact of facility type is not uniform, as much of the previous literature assumes. Franke and colleagues (2010) examined positive versus negative experiences associated with incarceration in this particular sample. Their results showed that those in the boot camp reported more positive experiences than those in the prison. This may go far in explaining the findings of the present research with respect to prosocial beliefs.

These findings support the notion that all forms of incarceration are not equal. This not only has important research implications but also warrants the attention of policy makers. If certain aspects of different facilities can foster feelings of positive experiences and greater acceptance of the law, it seems to follow that those conditions should

lead to decreased recidivism. We agree with Franke et al. that the data should not be interpreted to mean that boot camps are a sine qua non for incarceration. We want to be clear that we do not interpret these data as marginally supporting one policy over another—that was not our intent with this study. Rather, the point here is that research must be sensitive to the notion that prisons may differ in their impact on inmates' social ties or social bonds. A failure to recognize heterogeneity may lead to overly simplistic conclusions on this matter.

We also explored changes in social relationships by paying special attention to the criminal disposition of those in our sample's social network. Perhaps not surprisingly, the results indicated that regardless of the disposition of the offenders' family, there was little difference between the two study groups. This means that for both prosocial and antisocial family, social relationships changed in a similar fashion in the boot camp and the prison.

A finding of no difference by incarceration type on changes in relationships (taking orientation into account) could mean that the two types of incarceration examined here have substantively similar impacts on inmates. Yet we doubt this is true considering the significant structural differences across the two facilities and our finding of a trend toward a significant difference with respect to belief and facilitative attachment. Instead, we interpret this finding as informing the debate regarding the effects of prisons on outside relationships. Prisons have long been regarded as silos in which attachment to prosocial others becomes strained at best, knifed off at worst (Sampson & Laub, 1993). Opponents of traditional boot camps might argue that the isolation of inmates (e.g., no visits, no phone calls) that characterize some programs would damage relationships with prosocial others. With respect to antisocial peers, some have argued that prisons are virtual "schools of crime" because of the mixing of criminal offenders (Shover, 1996). In the lack of difference between the two prisons, we find evidence contrary to both of these arguments. If boot camps, because of their strict policies limiting contact with the outside world, damage social bonds more so than traditional prisons, we would expect to find relationships with prosocial others to have deteriorated more in the boot camp group. Yet our data show this is not the case. Similarly, if prisons enhance antisocial relationships because of structural characteristics (e.g., the prison in this study had mixed security levels and thus far greater exposure to serious offenders) as some have argued, the prison group should have reported increased attachment to antisocial others. Here again, our data show this not to be the case. In fact, our data indicate that inmates perceived very little change in any of their relationships (recall that a score of 1 indicates "no change"). In sum, the various "harms" with respect to relationships that scholars have attributed to incarceration may not be germane to short-term (e.g., 6 months) prison sentences. Although we cannot determine whether the same would be true of long-term sentences, it is fair to say that the negative consequences of incarceration may not be as pronounced with short-term sentences.

Although the research design of the study was strong, the results must be interpreted with several limitations in mind. First, we were unable to examine "traditional" measures of social bonds typically found in the literature. Such measures as having a

job and the quality of that job were not available in our data. However, the measures we used were closer representations of the processes implied by commitment and attachment than those used in previous research. For example, instead of assuming that attachment and commitment are represented by events (e.g., a marriage or landing a job), we tapped the degree of attachment to family and the intention to conform.

Second, our measure of change in social relationships was limited. Our data included a battery of items intended to capture how participants' relationships had improved or worsened since they were incarcerated. However, many participants indicated that they did not have a given relationship (e.g., spouse) at Time 1, and thus could not answer how that relationship changed at Time 2. In addition, many of our Time 2 bond measures were not included on the Time 1 survey. This prevented a more robust change analysis (e.g., Time 2 to Time 1). Therefore, showing a difference at Time 2 cannot tell us whether the prisoners with higher scores improved, or just deteriorated less than the other group.

Despite these limitations, the study offers several important advances for the field. First, it suggests there may be heterogeneity in the impact of prison across types of facilities or programs. Although there was also a theme of similarity across groups, the fact that some differences did emerge suggests that this type of research should be pursued, vigorously, in terms of identifying when, why, and how variation in prison structure affects offenders during a prison spell.

Future research should continue to explore ways in which current correctional policies affect prisoners' social bonds and ways in which such policies could be improved in this respect. Although these data do not necessarily show improvement in social bonds, it is possible that some forms of incarceration can have such an effect. Research is needed to examine this sample to further parse out who benefits from particular programs (e.g., is there an age–program effect?), and to determine if, once released, those who reported higher levels of social bonds do in fact have a lower recidivism rate. We hope that this study will provide a launching point for similar areas of research by showing that prisons may vary in their impact on social bonds. This research should seek to uncover aspects of prisons or facilities that encourage offenders to be prosocial.

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Notes

1. It should be noted that the boot camp facility offered greater access to these programs. However, by agreeing to take part in the study, the prison group was able to receive these services more quickly than they otherwise would have been possible.
2. Six inmates who had been randomly assigned to the boot camp were accidently transferred to the traditional prison instead. This occurred because a new case management supervisor hired at the boot camp misunderstood the research design and failed to follow instructions. The six inmates were included in the study to ensure the vitality of the randomized design. However, repeating the analyses below while including them (in the facility they were supposed to be in) did not result in substantive changes to our findings.
3. Hirschi's fourth element of "involvement" was not measured. This behavioral element reflects individual behavioral obligations that leave less time for crime. However, we did not have reasonable measures of how individuals allocated their time at the two programs, other than constants for each group. (The boot camp inmates had 100% of their time regimented; the prison group had large amounts of free time.) Because there was no variation in time allocation for boot camp inmates, any inclusion of involvement would artificially indicate that the boot camp inmates were more bonded than in fact they may have been if given a choice. Regardless, Hirschi (1969) was explicit in arguing that the elements of social bonds would be highly correlated, implying that measuring these three alone would be a reasonable proxy for bonds overall.
4. Principal components analysis (PCA) has traditionally been restricted to analyzing scales created from items with Likert-type response options (e.g., five or more categories). Using the tool when assessing scale properties derived from dichotomous items may generate "phantom" factors, and indication of more factors than in truth exist. In the case of this analysis, that bias is a strength. That is, the fact that a single factor was indicated (as hypothesized) despite a bias in the PCA method toward overidentification of factors implies an extra layer of certainty regarding our conclusion that one factor is reasonable.
5. Many participants indicated not having specific relationships at Time 1 and thus had no applicable information to offer. Although we analyzed each type of relationship separately, doing so invokes some important limitations. First, sample sizes for a given relationship type might become very small. Second, the theoretical issue in question here is whether prisons affect relationships. It is not clear that we should expect that impact to vary by the person referenced. Thus, an overall indicator for both family and friends seems optimal in terms of capturing differences between programs. This was measured as the average amount of change across relationship types. (If a person had only one relationship that could have changed, then the reported change in this relationship was used in this final "aggregated change" measure. If a person had all possible relationships and reported the change for each, then the average was reported.)

6. From a control theory perspective, it is reasonable to argue that those who are "neutral" with respect to the law may encourage offending much like the antisocial group for the simple reason that they provide no restraining influence or incentive toward conformity.
7. The *n* is very low in some of these comparisons. This is because many offenders did not have the relationship (e.g., spouse) in question.

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